

EXECUTIVE SUMMARY

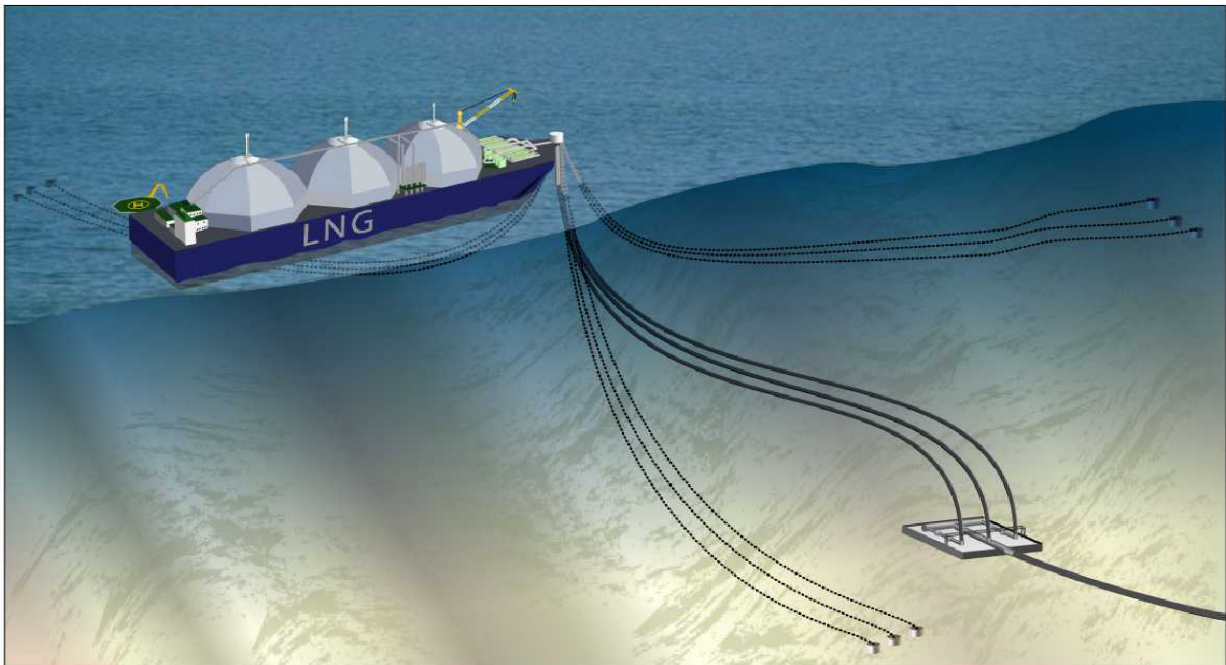
Cabrillo Port

Deepwater Port in the vicinity of Ventura, California



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INTRODUCTION

BHP Billiton LNG International Inc. (BHPB) proposes to construct and operate a new offshore floating storage and regasification unit (FSRU) for the receipt and handling of imported liquefied natural gas (LNG). The FSRU will be connected to a new 30-inch diameter subsea send out pipeline that will tie-in to existing onshore natural gas distribution facilities in the vicinity of Ormond Beach, California. The pipeline will be installed by horizontal directional drilling (HDD) techniques from the onshore landing out to a water depth of 43 feet (13 meters), which is approximately 3,000 feet from shore. The Cabrillo Port Project (the Project) will be located approximately 13.9 miles from shore, 21 miles from Anacapa Island, and 18 miles from the boundary of Channel Islands Marine Sanctuary. Operation of the Cabrillo Port is expected to commence in calendar year 2008.

This Environmental Analysis (EA) is a comprehensive environmental review of the Project that satisfies the requirements and guidelines of the Deepwater Port Act (DWPA), as well as the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA). It is intended for use by the lead Federal and state agencies in determining the potential environmental consequences of Project approval.

PURPOSE AND NEED

California currently uses natural gas for electric power generation, industrial, residential, and commercial uses. The Energy Information Administration (EIA) projects that natural gas demand in the United States will rise by 53 percent from 2000 to 2025. It is possible this demand could be met with local and regional energy alternatives, including oil, coal, nuclear, and other fuels. However, environmental and economic impacts, particularly to air quality and transportation, associated with these fuel alternatives generally exceed those impacts associated with natural gas alternatives. In addition, renewable energy sources, such as wind and solar power, are currently unreliable sources of electric power to replace natural gas generated electric power on the West Coast of the United States.

Demand for natural gas, a clean-burning fuel, partially stems from public support of the environmental advantages of natural gas over other fuels. Methane, the primary component of natural gas, is neither an ozone nor a smog precursor, and has not been identified as a criteria pollutant by either the U.S. Environmental Protection Agency or the California Air Resources Board. Natural gas can also be stored and transported with substantially fewer risks than other fossil fuels in its liquefied state. The characteristics of LNG differ substantially from oil and other petroleum products. In the unlikely event of a release, LNG quickly converts to

gaseous methane and dissipates in the air. In addition, it does not need to be pressurized for transport.

Demand for natural gas is increasing. The EIA estimates that while domestic natural gas demand will grow by roughly two percent a year through 2025, domestic supply will only rise by about one percent per year during this same period.

The Project is being proposed in response to this need. The Project will provide California consumers access to sources of natural gas from the Pacific Rim, and will provide greater flexibility and reliability in gas providers.

PROJECT DESCRIPTION

The FSRU will receive shipments of LNG from gas fields in the Pacific Basin. From the production fields, the natural gas will be purified and then refrigerated to less than -260°F . This low temperature will be maintained by insulation and evaporative cooling on the LNG carriers. On the FSRU, the LNG will be converted to natural gas. The FSRU can regasify up to a maximum capacity of 1.5 billion cubic feet (Bcf)/day, with a normal rate between 0.6 Bcf/day and 0.9 Bcf/day.

The FSRU is a ship-shaped, double-sided, double-bottom new LNG storage and regasification vessel. Its dimensions will be 938 feet (286 meters) long, 213 feet (65 meters) wide, and 148 feet (45 meters) tall, with a displacement of approximately 190,000 dead weight tons. The FSRU will be moored to the sea bed by a fixed, turret-style mooring point that uses nine cables and anchor points. The mooring point is in the Santa Monica Basin in waters 2,900 feet deep. At the mooring point, three 14-inch-diameter flexible riser pipes and a pipeline end manifold (PLEM) on the sea floor will connect to a new 30-inch-diameter, concrete-coated subsea pipeline. The pipeline will transit from the FSRU for 21.1 miles to reach shore, and an additional 0.65 miles to landfall at an existing Southern California Gas Company (SoCalGas, a subsidiary of Sempra Energy) facility north of the Reliant Ormond Beach Generating Station in Ventura County. SoCalGas, with minor modifications to its existing facilities, can accommodate the natural gas flow from the Project and will install an approximately 12-mile connecting pipeline from Ormond Beach to their central line along an existing gas pipeline right of way.

The FSRU will be completely constructed outside of the United States prior to arrival at the mooring location. The PLEM, flexible risers, and pipeline will be constructed prior to FSRU arrival. The Project will be located in a seismically active region; accordingly the pipeline will be laid directly on the sea floor surface from the PLEM onshore to waters 43 feet (13 m) deep (approximately 3,000 feet from shore). From this point to the

landfall at the existing SoCalGas facility, the pipeline will be buried using a combination of HDD and trenching techniques. Terrestrial and intertidal resources will be avoided by the use of HDD to within 0.35 miles of the tie-in. Trenching through already disturbed, unvegetated areas will complete the pipeline installation. Hydrostatic testing will be performed on all components of the Cabrillo Port prior to commissioning. On-site construction of the underground pipeline is expected to last 45 days.

Operation of the Cabrillo Port will require a permanent crew of 30 people. The Project has been design to minimize the environmental footprint it could create. In addition, all operations will meet or exceed all safety standards governing pipelines, marine vessels, and storage units.

The Project will comply with all federal, state, and local laws and ordinances in the Project area. Permits and plans likely to be required for the Project are outlined in Table 3-4.

ALTERNATIVES TO THE PROJECT

The purpose of this Project is to deliver clean burning natural gas to the West Coast of the United States by construction and operation of an LNG import terminal. The location and design of the Project were established as a result of an extensive analysis of alternatives, considering regional and local siting options and technological alternatives. All of the alternatives were assessed with respect to the environment, community concerns, safety, security, ability to meet the Project objectives, and technical and economic feasibility and practicality.

The mooring location of the Cabrillo Port was selected as it allows for the greatest feasible distance from the FSRU to the California coast, the Channel Islands National Marine Sanctuary and military use areas. The send out pipeline route was chosen for its relatively flat seafloor slope, minimal geologic hazards, relative lack of existing cables, pipelines and other nautical hazards, and minimal pipeline length. The onshore tie-in location was selected for its existing industrial use, and access to gas transmission systems and gas users.

Several technological alternatives were assessed for the proposed LNG terminal and pipeline. The seawater regasification process, which uses seawater to warm LNG, requires about 50 million gallons of seawater per day that is then returned to the ocean at lower than ambient temperatures. Although this process is commonly used at LNG regasification facilities, it was not chosen at this site. The FSRU was deemed a superior alternative as it is self-contained and would not raise concerns associated with entrainment of marine organisms and discharge of cold water. A fixed offshore LNG terminal was also ruled out due to the difficulty in finding a suitable site and potential impacts during

construction and abandonment, as well as visual impacts from proximity to the coast.

The proposed Cabrillo Port facility, in both location and design, is the most environmentally sound alternative that satisfies the Project's purpose.

ENVIRONMENTAL SETTING

The FSRU will be moored offshore of the Ventura County coastline, 13.9 miles offshore and 21 miles south of Anacapa Island. This location is 18 miles from the Channel Islands National Marine Sanctuary, and located well away from all shipping and small vessel traffic lanes, missile testing ranges, and zones of naval activity. It is also located far enough offshore to be below the horizon from many viewpoints.

The onshore portion of the Project is a very small facility located inland 0.4 miles. The underground pipeline passes beneath Ormond Beach and the Reliant Ormond Beach Generating Station. Currently, the Reliant Ormond Beach Generating Station, a wetland and lagoon complex, a wastewater treatment plant, heavy manufacturing facilities, roads, railroad tracks, flood control channels, drainage ditches, agricultural fields, and the urban center of the City of Oxnard are located in the vicinity of the onshore Project area. The pipeline will daylight in an existing SoCalGas facility, and therefore will not impact these onshore resources.

The offshore portion of the Project is located in the Southern California Bight (SCB), an ecologically distinct marine ecosystem spanning 620 miles from Point Arguello to Mexico. The SCB is defined by an abrupt change in the orientation of the California Coastline to a northwest-southeast direction in the vicinity of Point Conception. Ocean circulation in the SCB and in the vicinity of the Project is primarily influenced by the California Inshore Countercurrent, which flows adjacent to the shoreline in a northwesterly direction. Local surface circulation is also strongly influenced by local bottom topography, landmasses, offshore current motion, and local weather. The orientation of the SCB and the presence of the Channel Islands significantly reduce wave and wind action in the Project area.

Geologically, the offshore portion of the project is located on the Southern California Continental Borderland, an irregular complex of basins, shelves, banks, islands, and submarine canyons. The FSRU will be moored on the fringe of the Hueneme Fan in the Santa Monica Basin. Bottom slopes of the Shelf and Fan are relatively gradual and flat; slopes of up to 10% may exist at the Hueneme-Mugu Slope area crossed by the Project. The small onshore portion of the Project is inland of Ormond Beach in the coastal margin of the Oxnard Plain. This area has a

southwesterly slope of approximately 0.2 to 0.3 percent. No active or potentially active faults have been documented along the Project route, although five major active or potentially active faults are near the Project.

The Project crosses several marine habitats including sandy intertidal, sandy and rocky subtidal, deep soft sediment, and open water habitats. No hard bottom habitats, including kelp forests, are known to exist in the Project area. From 0.3 miles inland out to water depths of 43 feet (approximately 3,000 feet from shore), the pipeline will be installed by HDD, below the shore and seabed, and as such will not impair the shallow-water marine and intertidal habitats.

In the SCB, over 5,000 species of benthic invertebrates, 481 species of marine fishes, 195 species of shore and marine birds, 39 species of marine mammals, several species of sea turtles, and numerous species of plankton have been observed. Five species of pinnipeds that are protected under the Marine Mammal Protection Act of 1972 (MMPA) as depleted or strategic stocks could be found in the Project area. These include the federally threatened Northern sea lion, Guadalupe fur seal, and Southern sea otter. No threatened or endangered species of cetaceans are likely to be in the Project area, although three species of whales and six species of dolphins and porpoises that are protected under the MMPA are likely to be found in the Project area. Four species of threatened and/or endangered sea turtles could also be in the Project area. The federally and state endangered steelhead, as well as two species of fish that are being considered for threatened or endangered status, Bocaccio and Pacific rockfish, have been found near the Project area.

Onshore, two federally and state listed endangered plant species, the Ventura marsh milk vetch and salt marsh bird's beak, have been reported near the Project area. Ormond Beach and its surroundings provide habitat for a wide variety of birds, several of which are included on the federal or state threatened or endangered species lists.

POTENTIAL IMPACTS AND MITIGATION

Potential significant impacts to the natural resources associated with the Project are summarized below, and are presented in Table ES-2. All potentially significant impacts can be mitigated to less-than-significant levels, as summarized here and described in the remainder of the Environmental Analysis.

HAZARDS AND SAFETY

LNG, diesel fuel, lube oils and urea will be stored on the FSRU. Potential hazards are associated with the use and storage of these hazardous materials if they are not managed properly.

In the unlikely event of an escape, LNG quickly vaporizes upon release, significantly reducing the potential risk of spills as compared to oil or other hazardous materials. Also, LNG is stored under atmospheric pressure, and cannot explode like other pressurized hydrocarbon gases.

To prevent spills, releases, and/or fires associated with these materials, several control measures will be instituted on the FSRU. These include systems to prevent or limit releases, proper drainage, ignition source controls, emergency shutdown systems, emergency depressurizing systems, secondary spill containment systems, nitrogen and inert gas purging system, gas detection systems, fire detection systems, water deluge systems, and fire prevention systems. A detailed Spill Prevention and Countermeasure Control Plan (SPCC plan) will also be developed for all potentially hazardous substances and fuels associated with the Project. The FSRU will also be surrounded by a one-kilometer exclusion zone for enhanced facility safety and security.

Detailed hazard assessment and modeling was conducted in support of the Project design. Most potential release scenarios do not result in LNG reaching the water surface. A significant release of LNG from the FSRU, for example from a tank rupture and complete loss of the tank's contents, is estimated to be extremely unlikely, less than one occurrence per million years. Project design will comply with all applicable regulations to minimize spill occurrence, and response plans will be prepared. Any LNG accidentally spilled or released will vaporize quickly. In a worst case accident scenario, where the contents of the vessel are released, LNG would float on sea water surrounding the FSRU for a period of up to 5.5 days. For most small to moderate spills, LNG would vaporize within minutes of release.

GEOLOGY

Offshore construction must account for potential geologic hazards such as seismic loading, slope failure, liquefaction, and the possible presence of shallow oil and gas seeps. Design of every component of the Project to date has taken these geologic hazards into consideration. Geologic surveys will be conducted of the Project area and will clearly identify existing geologic hazards to the Project. Project siting and design will be modified accordingly depending on the results of these detailed surveys. No significant impacts to bottom topography, sediment transport, and

natural shoreline erosional processes in the SCB are expected to result from construction or operation of the Project.

WATER AND SEDIMENT QUALITY

A good baseline for water quality already exists. Water quality parameters in the Project area have been measured for several years by regional programs. Parameters measured include temperature, turbidity, salinity, dissolved oxygen, pH, nutrients, and contaminants such as metals, PCBs, bacteria, petroleum hydrocarbons, and pesticides.

For the most part, the FSRU will result in zero-intake and zero-discharge to the ocean. The only expected discharges from the FSRU are gray water from the crew quarters and other areas, runoff from the deck of the FSRU, and the one time discharge of water used for hydrostatic tests after pipeline construction. Gray water will be treated in chemical or biological sanitary waste systems pursuant to federal and state requirements prior to discharge. Runoff from the deck of the FSRU will be treated using an oily water treatment system. BHPB will obtain National Pollutant Discharge Elimination System (NPDES) permits for these discharges from the U.S. Environmental Protection Agency (USEPA).

Any accidental release of liquefied natural gas associated with the Project is not expected to significantly impact water or sediment quality due to the high vapor pressure and high solubility of methane, ethane, and propane in the LNG. Furthermore, neither the USEPA nor the Los Angeles Regional Water Quality Control Board (LARWQCB) list these compounds as toxic and as such have not developed water quality standards for these compounds. A release of natural gas from the FSRU or Project pipelines is not expected to significantly impact sediment or water quality as the gas is not considered toxic. A comprehensive Spill Prevention, Control, and Countermeasure Plan (SPCC) will be developed for LNG, natural gas, and all oil and hazardous materials associated with the Project to avoid spills and provide response and cleanup in the event of a release.

TERRESTRIAL BIOLOGY

Noise levels, lighting, and traffic resulting from both construction and operation of the Project are not expected to significantly exceed current background levels. The Project will use horizontal directional drilling (HDD) in lieu of marine-to-shore trenching for construction in order to minimize environmental impacts, including disruption of habitat for endangered shore birds. Grading and excavation will be limited to the HDD staging area at the SoCalGas tie-in, an existing industrial area. Trenching will occur across a disturbed, unvegetated area from the tie-in

for 0.35 miles to the HDD location. A worker Environmental Awareness Program and a Biological Resources Mitigation Implementation and Monitoring Plan (Table ES-2) will support avoidance of and minimize disruption to special status species. A SPCC Plan will also minimize the potential for fuel and lube oil spills from construction and transportation vessels associated with the Project. An accidental release of LNG will not affect onshore biotic resources in the Project area because of the distance to the FSRU. No significant impacts to onshore biological resources are, therefore, expected during both construction and operation of the Project.

MARINE BIOLOGY

Although few impacts on marine birds, invertebrates and fish are expected from the Project, more susceptible marine mammals and sea turtles could be affected in the highly unlikely event of a release of LNG, fuel, or lubricating oils from the FSRU or shuttle tankers. Additional impacts could result from construction activities or contact of a Project vessel or mooring line with a marine mammal or turtle.

Several measures will be taken by BHPB to avoid or mitigate any potential impacts to any marine wildlife, in particular marine mammals and turtles. A marine mammal observer and monitor will be aboard all construction vessels during times that marine mammals are likely to be present in the Project area. Additional SPCC plans and marine mammal contingency plans will be developed to avoid LNG, fuel or oil spills and effects to marine mammals and turtles. Other mitigation measures developed to avoid impacts to marine biota are listed in Table ES-2. BHPB will consult with U.S. Fish and Wildlife Service, National Marine Fisheries Service, Minerals Management Service, and/or California Department of Fish and Game to ensure these measures are sufficient.

AIR QUALITY

During construction, pipelay support vessels and welding units working offshore will produce air emissions. Since construction does not occur for a significant length of time, the impact of these emissions at any single location would be minor and short-term and, therefore, will have an insignificant impact on the air quality of the region.

During operations onboard the FSRU, the generator engines and submerged combustion vaporizers will be the greatest source of air emissions but will be mitigated by control technology. The fuel gas compressor, boil-off gas compressor, various pumps, heaters, scrubbers, and utility equipment will be electric powered and will not generate local air emissions. Diesel-powered construction equipment and backup units, as well as LNG carriers and assist vessels, will be sources of NO_x and

CO. Natural gas fuel will be used to the extent practical to mitigate these emissions. The Project will, therefore, not be expected to violate any existing air quality rules or contribute to a significant increase in air pollutants during operations.

COMMUNITY COMPATABILITY

The FSRU will be located approximately 13.9 miles from the Ventura shore. A person standing or driving at sea level can not generally see objects on the horizon beyond 3.1 miles. The FSRU, however, will be visible from elevated locations. When visible from shore, the FSRU will have the appearance of a ship. The FSRU will not emit substantial light and glare, and it will be painted dark blue on the hull and light blue on the LNG tanks to blend in with the natural surroundings as much as possible. On average, there is visibility of 10 miles or greater for 32 percent of the year in the Oxnard area.

The Project will be generally compatible with community resources such as agriculture, population, housing, tourism, public infrastructure, energy and mineral resources, low-income or minority communities, and offshore and onshore traffic. Some impacts to noise levels during construction, cultural resources, and the commercial fishing industry could occur if not properly mitigated. BHPB recognizes these concerns, and has sought to implement appropriate mitigation as part of the Project, as discussed below.

The Project will not be a significant source of noise to the surrounding environment. HDD during construction, though, may create relatively high noise levels. The mitigation measures outlined in Table ES-2 should reduce temporary drilling operation noise to 70 decibels or below, and therefore will not significantly affect neighboring areas.

Based on a literature review, the FSRU and pipeline right of way will not cross known archaeological or historic resources. A survey will be conducted to test for the potential presence of these resources, and if found these resources would be avoided.

There may be impacts to local and commercial fishing industries associated with the projects. As there will be an exclusion zone surrounding the FSRU for safety purposes, fishing will be limited in this area. Trawlers may also need to avoid pipeline and other Project structures, particularly during construction. It is also possible that supply and construction vessels associated with the Project may damage some fishing gear. Although no significant impacts are expected to the fishing industry, if needed BHPB will work with the Joint Oil and Fisheries Liaison Office to mitigate any impacts associated with the fishing industry.

BHPB has prepared an initial Environmental Compliance Management Plan, intended to guide the application of mitigation measures associated with Project construction and startup. BHPB will work with the appropriate resource agencies and stakeholders as the NEPA/CEQA review is conducted to further define actions needed and to assure their complete implementation.